



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,743	09/29/2003	Hiroaki Yoda	243401US2S	6747
22850	7590	12/15/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LUU, PHO M	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,743

Applicant(s)

YODA ET AL.

Examiner

Pho M Luu

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 17-30 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 and 13-16 is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/22/04; 08/31/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Search History.

DETAILED ACTION

Reply to Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1-16 filed 16 November 2004 is acknowledged. The changes and remarks disclosed therein were considered.
2. Claims 17-30 have been canceled.
3. Claims 1-16 are pending in the application.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

5. Acknowledgment is made of applicant's Information Disclosure Statement (IDS) Form PTO-1449, filed 22 January 2004. The information disclosed therein was considered.

Acknowledgment is made of applicant's Information Disclosure Statement (IDS) Form PTO-1449, filed 31 August 2004. The information disclosed therein was considered.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 5-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Saito et al. (US. 2002/0034094).

Regarding claims 5 and 9, Saito et al in Figure 1A-1D discloses a magnetic random access memory (10, Figure 1A-1D and 2A) comprising:

a write wiring (14, 15, 16, Figure 1A-1D) constituted by at least one wiring;

a magnetic tunnel junction (13, Figure 1A-1D) device which is disposed closely to the write wiring (magnetic tunnel junction is position between wiring 14, 15 crossing at right angles to each other and a lower end of the tunnel junction is connected to the transistor 12 such a sense current via a wiring 16, Figure 1A-1D) and in which magnetic flux generated by supply voltage a current (a transistor 12 such as a sense current to be passed the magnetic memory 11, Figure 1A-1D) to the write wiring and

a magnetic layer (18, Figure 2A) provided to cover at least a part of a sidewall (magnetization layer 25 is position between sidewall portion of the magnetic layer 18, Figure 2A) of the write wiring and having a structure in which grains are deposited like a layer (see column 4, paragraph 0062).

With respected to claims 6-8 and 10-12, Saito et al. in Figure 1A-1D and Figure 4 disclosed the magnetic random access memory (10, Figure 1A-1D) which is the write wiring (14, 15 in Figure 1A-1D) serves as a write bit line (15 in Figure 4 is used as a bit

Art Unit: 2824

line, see column 6, paragraph 0085, lines 3-5) and a write word line (14 in Figure 4 is used as a word line, see column 6, paragraph 0085, lines 5-6).

Allowable Subject Matter

8. Claims 1-4 and 13-16 are allowed.

The following is an examiner's statement of reasons for allowance:

There is no teaching or suggestion in the prior art to: "a magnetic layer which is provided so as to cover at least a part of a sidewall of the write wiring and formed by grown columnar grains and in which the growing direction of the columnar grain is 300 or less from the normal line direction of the sidewall" as claimed in the independent claim 1 and independent claim 13.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Lage (US. 6,621,730) disclosed an MRAM device including a write line the device with a current travels in a substantially vertical direction.

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Pho M. Luu whose telephone number is 571.272.1876. The examiner can normally be reached on M-F 8:00AM – 5:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Richard Elms, can be reached on 571.272.1869. The official fax number for the organization where this application or proceeding is assigned is 703.872.9306 for all official communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PML
10 December 2004



MICHAEL S. LEBENTRITT
PRIMARY EXAMINER